epiTRENDS

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In This Issue:

Survey Reveals Variability in Emergency Care for Heart Disease and Stroke in Washington State

Coronary heart disease is the leading cause of death in the United States and in Washington State. Diseases of the heart accounted for 11,477 deaths in Washington in 1999. Stroke is the third leading cause of death in Washington, with 3,705 deaths attributable to cerebrovascular diseases in 1999. Many of these deaths could be prevented through appropriate behavior changes such as smoking cessation, exercise, and improved nutrition. In addition, early recognition and treatment could also prevent unnecessary deaths and disability.

In recognition of this major public health problem, the state Emergency Medical Services and Trauma Steering Committee in 1999 established a technical advisory committee to assess the status of emergency cardiac and stroke care and determine the need for system improvement. The committee reviewed prehospital care of patients, hospitalizations and cardiac case volumes, outcomes of hospitalizations related to availability of cardiologists and cardiac teams, and insurance issues.

Prehospital patient care extends from the time an emergency medical services (EMS) organization first receives a call until the EMS releases the patient to the hospital. Statewide, about 31% of agencies reported average prehospital patient care times of 30 minutes or less, nearly 51% reported times of 30–60 minutes, and 18% reported times of 60 minutes or longer. Rapid stabilization, transfer, and treatment of cardiac and stroke patients improved survival.

All basic life support (BLS) agencies (staffed by emergency medical technicians, not paramedics) provide oxygen to patients with acute coronary syndrome. Statewide, 56% of BLS agencies report assisting patients with administration of nitroglycerin for suspected heart attacks, although the practice varies by region.

Sixty-four percent of advanced life support agencies (ALS, staffed by paramedics) perform an initial 12-lead electrocardiogram (EKG). About 20% of agencies report completing a high-risk checklist for patients

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Information Resources on Bioterrorism Available for Health Care Providers and Public Health Workers

Federal, state, and local public health authorities continue to investigate cases of bioterrorism-related anthrax in several eastern cities. Twenty-two cases of anthrax had been identified as of November 14, but have been confined to a few East Coast sites with documented exposures. No suspected or known exposures to anthrax have occurred in any western states, including Washington. Testing for exposure to anthrax (by obtaining nasal swabs or serum for antibody titers) is rarely indicated, and should only be done as part of an epidemiologic investigation, in consultation with Washington State Department of Health Communicable Disease Epidemiology (CDE). Prescribing postexposure prophylaxis should only occur in the setting of a known or highly suspected exposure, following consultation with CDE. For any suspected exposures or threats, local public health departments and law enforcement agencies should always be contacted to aid in the evaluation.

As the influenza season approaches, many clinicians have requested guidance on how to distinguish influenza from inhalational anthrax. Because the risk for inhalational anthrax is so low in Washington, we advise that patients with respiratory

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Emergency Care *(from page 1)*

with symptoms suggesting a heart attack, and 61% report ability to activate the hospital's emergency cardiac response.

Washington's medical program directors (MPD) oversee the care provided by certified EMS personnel. A survey of MPDs to assess prehospital protocol and care issues documented statewide variability (Table 1).

Hospitalizations and Cardiac Case Volumes

In 1999, 11,706 persons were hospitalized with a primary diagnosis of acute myocardial infarction (AMI); 933 patients died. The top 10 hospitals for admission of patients with AMI accounted for 47% of all cardiac admissions in Washington. In contrast, the 50 low-volume hospitals (less than 100 AMI admissions per year) accounted for only 12% of cardiac admissions**.** Excluding transfers to another acute care facility, high-volume hospitals had a case fatality of 7.4% compared to 14.3% for low-volume hospitals (relative risk, RR: 1.92; 95% CI 1.6, 2.3).

Availability of a Cardiologist

All large hospitals (100+ beds) report having a cardiologist available (either on-staff or on-call). None of the smallest hospitals (<20 beds) report having a cardiologist available. Seventy-seven percent of hospitals without cardiologists admit patients with acute coronary syndrome. Most (77%) of these hospitals do not have a protocol for suspected heart attacks. Outcome evaluations based on 1999 hospital data (CHARS) include:

- 36% of AMI patients admitted to hospitals without a cardiologist were subsequently transferred to other acute care facilities, compared with less than 14% of cases transferred from hospitals with a cardiologist.
- In-hospital case fatality was nearly 15% for hospitals without a cardiologist compared to 9% for those with a cardiologist (excludes transferred patients) (RR: 1.57; 95% CI 1.15, 2.16).

Cardiac Team

Fifteen percent of hospitals reported having a cardiac response team in place to respond to patients with suspected heart attacks. Hospitals with and without a cardiac team achieved similar survival outcomes with open-heart surgery (RR: 0.93; 95% CI 0.85, 1.01). For hospitals without open heart surgery capacity, the presence of a cardiac team is associated with reduced mortality (RR: 0.84; 95% CI 0.74, 0.96).

Insurance-Payer Factors

Data on hospitalizations for acute myocardial infarction from 1995–1999 revealed that persons under age 65 who were self-insured or covered by Medicaid were more likely to die during their hospitalization compared to patients with commercial insurance (4.6% vs. 2.6%, RR 1.76, 95% CI 1.36, 2.27). Similarly, persons aged 65–74 who were self-insured or covered by Medicaid were more likely to die in the hospital than were those with Medicare or commercial insurance (14.7% vs. 9.1%, RR 1.62, 95% CI 1.19, 2.20). The data revealed no difference in mortality by payer for persons aged 75 and older.

Next Steps

The technical advisory committee is developing recommendations to reduce variability and improve outcomes emergency cardiac and stroke care in Washington State. The committee will present its recommendations to the Emergency Medical Services and Trauma Steering Committee in early 2002. For web sites with additional information, see WWW Access Tips, page 4.

For More Information:

For a copy of the full report, contact the DOH Office of Emergency Medical and Trauma Prevention at 800-458-5281.

TABLE 1: Status of prehospital protocols and care issues revealed in survey of medical program directors

- 7% of MPDs have protocols that permit prehospital fibrinolysis in special circumstances (e.g., patient transport >60 minutes);
- 70% plan to incorporate the American Heart Association 2000 guidelines into their protocols;
- 48% have local operating procedures identifying the location of the nearest hospital with the appropriate level of care for treating suspected heart attacks;
- 82% report that all response units are equipped with defibrillators;
- 52% report that every community within their county has access to EMS personnel able to provide timely, advanced cardiac life support (ACLS) care, including intubation and intravenous medications;
- 70% report that every community within their county has access to a defibrillation program in a tiered EMS response system; and
- 63% report that barriers exist that if eliminated would improve care provided to patients with acute coronary syndrome or acute stroke.

Monthly Surveillance Data by County

October 2001* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead§#
Adams	0	0	0	0	0	0	0	0	0	1	0	2	1	0/0
Asotin	0	0	0	0	0	0	0	0	0	2	0	0	0	0/0
Benton	0	0	1	0	0	0	0	1	1	27	0	0	3	0/#
Chelan	1	0	1	0	0	0	0	0	0	2	0	0	3	1/10
Clallam	0	1	0	0	1	0	0	0	0	5	0	0	0	0/#
Clark	1	2	3	0	0	0	1	0	0	62	12	0	0	0/#
Columbia	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Cowlitz	0	0	0	0	3	0	0	0	0	20	5	1	0	0/39
Douglas	0	1	1	0	0	0	0	0	0	5	0	0	1	0/0
Ferry	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Franklin	0	1	0	0	0	0	0	0	0	14	1	1	1	0/6
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	0	0	1	0	0	0	0	0	22	0	0	1	0/43
Grays Harbor	0	0	0	0	0	0	0	0	0	2	0	0	0	0/5
Island	0	0	0	0	0	0	0	1	1	8	4	0	0	0/#
Jefferson	0	0	0	0	0	0	0	0	0	2	0	0	0	0/#
King	4	30	12	4	0	1	1	5	8	414	156	12	2	1/36
Kitsap	0	0	0	1	0	0	0	0	0	55	17	0	0	0/#
Kittitas	1	0	0	0	0	0	0	0	0	11	0	0	0	1/#
Klickitat	0	0	0	0	1	0	0	0	0	3	0	0	0	0/0
Lewis	1	0	0	0	0	0	0	0	0	0	0	1	0	0/#
Lincoln	0	1	0	0	0	0	0	0	0	0	0	0	0	0/0
Mason	0	0	0	0	0	0	0	0	0	12	1	0	0	0/0
Okanogan	0	0	0	0	0	0	0	0	0	13	1	0	0	0/#
Pacific	0	0	0	1	0	0	0	0	0	0	0	0	0	0/#
Pend Oreille	0	0	0	0	0	0	0	0	0	1	0	0	0	0/#
Pierce	3	4	3	9	1	0	0	1	2	225	72	11	1	3/24
San Juan	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Skagit	0	2	0	0	1	0	0	0	0	24	3	0	0	0/#
Skamania	0	0	1	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	5	3	4	1	2	0	0	0	0	133	17	2	0	1/14
Spokane	6	2	0	1	4	1	2	0	1	104	9	3	1	0/20
Stevens	0	0	0	0	0	0	0	0	0	5	0	0	0	0/0
Thurston	3	1	0	0	0	0	0	0	2	32	1	2	0	0/6
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	0	0	1	0	0	0	0	0	0	5	0	0	1	2/22
Whatcom	2	0	0	0	0	0	0	0	2	22	1	0	0	0/17
Whitman	0	0	0	0	0	0	0	0	0	12	2	0	0	0/0
Yakima	1	7	4	4	1	1	0	1	2	89	4	2	3	0/14
Unknown														0/0
Current Month	28	55	31	22	14	3	4	9	19	1335	306	37	18	9/277
October 2000	20	70	38	26	16	4	9	51	23	1008	207	34	29	9/376
2001 to date	115	455	183	127	124	20	59	134	202	11530	2563	415	195	105/3567
2000 to date	195	487	401	245	93	28	49	340	211	10740	1911	415	306	111/3547

* Data are provisional based on reports received as of October 31, unless otherwise noted.
† Unconfirmed reports of illness associated with pesticide exposure.
§# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.

Bioterrorism Information *(from page 1)*

symptoms be evaluated exactly as they would have been last year. There are no reliable tests or constellation of symptoms that can definitely distinguish early inhalational anthrax from influenza. Providers concerned about patients with unexplained critical febrile illnesses should consult with their local health department or call CDE at 1-877-539-4344.

The web sites listed in Table 1 offer general information about bioterrorism. The Department of Health provides fact sheets for diseases, responses to frequently asked questions, information for public health departments, health care providers, and emergency responders, and links to local health jurisdictions and other sites. The Centers for Disease Control and Prevention (CDC) offers health alerts and information about public health emergency response. The site includes fact sheets, advisories for health care providers, laboratorians, and first responders, training opportunities and educational resources, and citations for *Morbidity and Mortality Weekly Review* (*MMWR*) articles on bioterrorism.

WWW Access Tips

For information on emergency cardiovascular disease and emergency care, consult the following web sites: American Heart Association, http://www.americanheart.org; American College of Cardiology, http:// www.acc.org

*epi*TRENDS online

http://www.doh.wa.org/Publicat/EpiTrends/01-02_EpiTrends/2001_trend.htm

TABLE 1: Information resources on bioterrorism

Washington State Department of Health: http://www.doh.wa.gov/Alerts/BioTerrorism.htm

The Centers for Disease Control and Prevention (CDC): http:/www.bt.cdc.gov

An on-line health care provider CME course on clinical aspects of critical biological agents: http://mappp.org/epi/info

Additional public health resources include:

National Association of City and County Health Officials: http://www.naccho.org/project63.cfm

Center for the Study of Bioterrorism and Emerging Infections – Saint Louis University http://www.slu.edu/colleges/sph/bioterrorism/

Johns Hopkins Center for Biodefense: http://www.hopkins-biodefense.org/

Additional medical resources include:

American College of Physicians: http://www.acponline.org/bioterro/index.html?hp

American Academy of Pediatrics: http://www.aap.org/advocacy/releases/smlpoxanthrax1.htm

Infectious Disease Society of America: http://www.idsociety.org/PA/PS&P/BT_Preparedness_10-2-01.htm

Association of Infection Control Practitioners: http://www.apic.org/bioterror/

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